AMENDMENT

In the Claims

Please cancel claims 10 and 36 without prejudice. Please amend claims 2-3, 6, 9, 11-12, 22, 27-30, 34-35, 37, 39, 43- 45, and 48, as shown in the PENDING CLAIMS section that begins with page 3 of this paper. Please add new claims 49-64 as shown in the PENDING CLAIMS section. Claims 1, 4-5, 7-8, 31-33, 38, 40-42, and 46-47 remain unchanged from the previous amendment, which are also presented in the PENDING CLAIMS section so as to constitute the entire set of the pending claims under consideration. A marked-up version for the claims being changed by this amendment is attached herewith as separate sheets titled "Marked-up Version of Claims Showing Changes Made."

PENDING CLAIMS

1. (Once Amended) A method for annealing a lithium niobate ($LiNbO_3$) structure, the method comprising:

heating the lithium niobate structure in a sealed pure oxygen gas (O_2) atmosphere substantially lacking in H_2O;

pressurizing the sealed pure oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

2. (Twice Amended) The method of claim 1 wherein said heating comprises:

locating a lithium niobate powder proximate to the lithium niobate structure to retard outgassing of lithium oxide (Li_2O) from the lithium niobate structure.

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3. (Twice Amended) The method of claim 2 wherein said heating further comprises:

separating the lithium niobate powder from the lithium niobate structure with an interface porous to lithium oxide gas outgassed from the lithium niobate powder and the interface substantially without porosity to the lithium niobate powder.

4. (Once Amended) The method of claim 3 wherein the interface includes a porosity of approximately 20 microns.

5. (Unamended) The method of claim 1 wherein said pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

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6. (Twice Amended) The method of claim 1 wherein said heating is within a temperature range of about 150 degrees Celsius to about 900 degrees Celsius.

7. (Unamended) The method of claim 1 wherein said cooling occurs within a range of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

8. (Once Amended) The method of claim 1 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

9. (Twice Amended) A method for annealing a lithium niobate ($LiNbO_3$) structure, the method comprising:

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locating a lithium niobate powder in a space proximate to the lithium niobate structure to retard outgassing of lithium oxide (Li_2O) from the lithium niobate structure;

separating the space including the lithium niobate powder from the lithium niobate structure with an interface porous to lithium oxide gas outgassed from the lithium niobate powder, the interface being substantially without porosity to the lithium niobate powder;

heating the lithium niobate structure and the lithium niobate powder in a sealed oxygen gas (O_2) atmosphere;

pressurizing the sealed oxygen gas atmosphere to a pressure above ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

11. (Twice Amended) The method of claim 9 wherein the interface includes a porosity of approximately 20 microns.

12. (Twice Amended) The method of claim 9 wherein the sealed pure oxygen gas atmosphere substantially lacks in H_2O.

13. (Unamended) The method of claim 9 wherein said cooling occurs within a range of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

22. (Twice Amended) A method for annealing a lithium tantalate ($LiTaO_3$) structure, the method comprising:

heating a lithium tantalate structure in a sealed pure oxygen gas (O_2) atmosphere substantially lacking in H_2O;

pressurizing the sealed pure oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

27. (Once Amended) The method of claim 22 wherein said heating further comprises:

locating a lithium tantalate powder proximate to the lithium tantalate structure to retard outgassing of lithium oxide (Li_2O) from the lithium tantalate structure.

28. (Once Amended) The method of claim 27 wherein said heating further comprises:

separating the lithium tantalate powder from the lithium tantalate structure with an interface porous to lithium oxide gas outgassed from the lithium tantalate powder and the interface substantially without porosity to the lithium tantalate powder.

29. (Once Amended) The method of claim 28 wherein the interface includes a porosity of approximately 20 microns.

30. (Once Amended) The method of claim 22 wherein said heating is within a temperature range of about 150 degrees Celsius to about 900 degrees Celsius.

31. (Unamended) The method of claim 22 wherein said cooling occurs within a range of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

32. (Unamended) The method of claim 22 wherein the pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

33. (Unamended) The method of claim 22 wherein the heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

34. (Once Amended) The method of claim 22 wherein, wherein the lithium tantalate structure includes at least one of an optical modulator and an optical waveguide.

35. (Once Amended) A method for annealing a lithium tantalate ($LiTaO_3$) structure, the method comprising:

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locating a lithium tantalate powder in a space proximate to the lithium tantalate structure to retard outgassing of lithium oxide (Li_2O) from the lithium tantalate structure;

separating the space including the lithium tantalate powder from the lithium tantalate structure with an interface porous to lithium oxide gas outgassed from the lithium tantalate powder and the interface substantially without porosity to the lithium tantalate powder;

heating the lithium tantalate structure and the lithium tantalate powder in a sealed oxygen gas (O_2) atmosphere;

pressurizing the sealed oxygen gas atmosphere to a pressure above ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

37. (Once Amended) The method of claim 35 wherein the interface includes a porosity of approximately 20 microns.

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38. (Unamended) The method of claim 35 wherein with a sealed pure oxygen gas atmosphere substantially lacking in H_2O.

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39. (Once Amended) The method of claim 35 wherein said heating is within a temperature range of about 150 degrees Celsius to about 900 degrees Celsius.

40. (Unamended) The method of claim 35 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

41. (Unamended) The method of claim 35 wherein said pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

42. (Unamended) The method of claim 35 wherein said cooling occurs within a range of rates of about 0.5 degrees Celsius per minute to about 40 degrees Celsius per minute.

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43. (Once Amended) The method of claim 35 wherein the lithium tantalate structure includes at least one of an optical modulator and an optical waveguide.

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44. (Once Amended) The method of claim 1 wherein the lithium niobate structure includes at least one of an optical modulator and an optical waveguide.

45. (Once Amended) The method of claim 9 wherein said heating is within a temperature range of about 150 degrees Celsius to about 900 degrees Celsius.

46. (Unamended) The method of claim 9 wherein said heating occurs at a rate within the range of about 0.5 degrees Celsius per minute to about 12.0 degrees per minute.

47. (Unamended) The method of claim 9 wherein said pressurizing is within a pressure range of about 2 psi above ambient atmospheric pressure to about 25 psi above ambient atmospheric pressure.

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48. (Once Amended) The method of claim 9 wherein the lithium niobate structure includes at least one of an optical modulator and an optical waveguide.

49. (New) The method of claim 6 wherein said heating is within a temperature range of about 150 degrees Celsius to about 600 degrees Celsius.

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50. (New) The method of claim 49 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

51. (New) The method of claim 30 wherein said heating is within a temperature range of about 150 degrees Celsius to about 600 degrees Celsius.

52. (New) The method of claim 51 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

53. (New) The method of claim 39 wherein said heating is within a temperature range of about 150 degrees Celsius to about 600 degrees Celsius.

54. (New) The method of claim 53 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

55. (New) The method of claim 45 wherein said heating is within a temperature range of about 150 degrees Celsius to about 600 degrees Celsius.

56. (New) The method of claim 55 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

57. (New) A method for annealing a lithium niobate ($LiNbO_3$) structure, the method comprising:

heating the lithium niobate structure in a sealed oxygen gas (O_2) atmosphere substantially lacking in H_2O to within a temperature range of about 150 degrees Celsius to about 500 degrees Celsius;

pressurizing the sealed oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

58. (New) The method of claim 57 wherein said heating is within a temperature range of about 150 degrees Celsius to about 400 degrees Celsius.

59. (New) The method of claim 57 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

60. (New) The method of claim 57 wherein said heating is performed at a temperature about 300 degrees Celsius.

61. (New) A method for annealing a lithium tantalate ($LiTaO_3$) structure, the method comprising:

heating a lithium tantalate structure in a sealed oxygen gas (O_2) atmosphere substantially lacking in H_2O to a temperature range of about 150 degrees Celsius to about 500 degrees Celsius;

pressurizing the sealed oxygen gas atmosphere to exceed ambient atmospheric pressure;

maintaining temperature and pressure for an anneal period; and

cooling to room temperature.

62. (New) The method of claim 61 wherein said heating is within a temperature range of about 150 degrees Celsius to about 400 degrees Celsius.

63. (New) The method of claim 61 wherein said heating is within a temperature range of about 300 degrees Celsius to about 400 degrees Celsius.

64. (New) The method of claim 61 wherein said heating is performed at a temperature about 300 degrees Celsius.